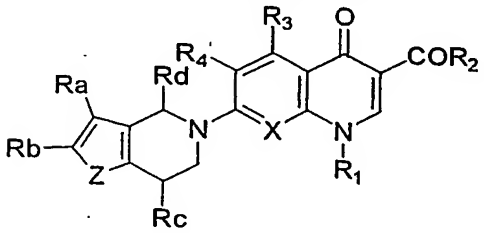
We claim:

1. A compound of formula (I), their analogs, their stereoisom , tautomeric forms, their pharmaceutically acceptable salts, their pharmaceutically acceptable solvates, and pharmaceutical compositions containing them.



(I)

Wherein

R_1 represents hydrogen, linear or branched, substituted or unsubstituted groups selected from (C_1-C_{12}) alkyl, (C_2-C_{12})alkenyl, (C_2-C_{12})alkynyl, (C_3-C_{12})cycloalkyl; substituted or unsubstituted groups selected from aryl, heteroaryl or heterocyclic groups; R_2 is selected from hydrogen, -OBF_2 or –OR_6,

Where R_6 represents hydrogen, (C_1-C_6)alkyl, (C_3-C_6)alkenyl or (C_3-C_6)alkynyl groups, which may optionally be substituted; R_3 represents H, OH, linear or branched, substituted or unsubstituted groups selected from –O(C_1-C_{12}) alkyl, -O(C_2-C_{12}) alkenyl, -O(C_2-C_{12}) alkynyl, halo, NO_2, CN, or NR'R'' groups, where R'R'' may be same or different and independently represent H, linear or branched, substituted or unsubstituted groups selected from (C_1-C_6) alkyl, (C_2-C_6) alkenyl, (C_2-C_6)alkynyl or acyl groups; R_4 represents H or halogen atom; X represents N or C-R_7, where R_7 represents H, -OH, -$(O)_n$(C_1-C_6)substituted or unsubstituted alkyl where n is 0 or 1, -NO_2, -NH_2, -$NHCOCH_3$, -CN, -COOH groups; R_1 and R_7 can be taken together with the atoms to which they are attached to form a cyclic ring, which may optionally be substituted and may also optionally contain from 1 to 3 heteroatoms selected from O, N and S;

Ra, Rb may be same or different and represents hydrogen, halogen, haloalkyl, perhaloalkyl, haloalkoxy, perhaloalkoxy, hydroxy, thio, amino, nitro, cyano, formyl, or substituted or unsubstituted groups selected from linear or branched (C_1-C_{12})alkyl, linear or branched (C_1-C_{12})alkenyl, linear or branched (C_1-C_{12})alkynyl, (C_3-C_7)cycloalkyl, (C_3-C_7)cycloalkenyl, bicycloalkyl, bicycloalkenyl, (C_1-C_{12})alkoxy, (C_1-C_{12})alkenoxy, cyclo(C_3-C_7)alkoxy, aryl, aryloxy, aralkyl, ar(C_1-C_{12})alkoxy, heterocyclyl, heteroaryl, heterocyclyl(C_1-C_{12})alkyl, heteroar(C_1-C_{12})alkyl, heteroaryloxy, heteroar(C_1-C_{12})alkoxy, heterocycloxy, heterocyclylalkyloxy, acyl, acyloxy, acylamino, mono-substituted or di-substituted amino, arylamino, aralkylamino, carboxylic acid and its derivatives such as esters and amides,

hydroxyalkyl, aminoalkyl, mono-substituted or di-substituted aminoalkyl, alkoxyalkyl, aryloxyalkyl, aralkoxyalkyl, (C_1-C_{12})alkylthio, thio(C_1-C_{12})alkyl, arylthio, (C_1-C_{12})alkoxycarbonylamino, aryloxycarbonylamino, aralkyloxycarbonylamino, aminocarbonylamino, alkylaminocarbonylamino, alkylamidino, alkylguanidino, dialkylguanidino, hydrazino, alkyl hydrazino, alkoxyamino, hydroxylamino, derivatives of sulfenyl and sulfonyl groups, sulfonic acid and its derivatives, phosphonic acid and its derivatives; R_c & R_d may be same or different and represents hydrogen, substituted or unsubstituted groups selected from alkyl, alkenyl groups;

Z represents O, S or NH, which may optionally be substituted;

2. A compound as claimed in claim 1 wherein the substituents on R_1, R_2, R_3, R_6, R_7, R', R'', X, Ra, Rb, Rc & Rd are selected from hydroxyl, oxo, halo, thio, nitro, amino, cyano, formyl, amidino, guanidino, hydrazino, alkyl, haloalkyl, perhaloalkyl, alkoxy, haloalkoxy, perhaloalkoxy, alkenyl, alkynyl, cycloalkyl, cycloalkenyl, bicycloalkyl, bicycloalkenyl, alkoxy, alkenoxy, cycloalkoxy, aryl, aryloxy, aralkyl, aralkoxy, heterocylyl, heteroaryl, heterocyclylalkyl, heteroaralkyl, heteroaryloxy, heteroaralkoxy, heterocyclyloxy, heterocyclylalkoxy, heterocyclylalkoxyacyl, acyl, acyloxy, acylamino, monosubstituted or disubstituted amino, arylamino, aralkylamino, carboxylic acid and its derivatives such as esters and amides, carbonylamino, hydroxyalkyl, aminoalkyl, alkoxyalkyl, aryloxyalkyl, aralkoxyalkyl, alkylthio, thioalkyl, arylthio, alkoxycarbonylamino, aryloxycarbonylamino, aralkyloxycarbonylamino, aminocarbonylamino, alkylaminocarbonylamino, alkoxyamino, hydroxyl amino, sulfenyl derivatives, sulfonyl derivatives, sulfonic acid and its derivatives, phosphonic acid and its derivatives.

3. A compound as claimed in claim 1 wherein R_2 represents -OBF_2 or –OH group.

4. A compound according to claim 1 which is selected from :

1-Cyclopropyl-6-fluoro-8-methoxy-7-(2-nitro-6,7-dihydro-4H-thieno[3,2-c]pyridin-5-yl)-4-oxo-1,4-dihydro-quinoline-3-carboxy fluoroborate and its pharmaceutically acceptable salts;

1-Cyclopropyl-6-fluoro-8-methoxy-7-(2-nitro-6,7-dihydro-4H-thieno[3,2-c]pyridin-5-yl)-4-oxo-1,4-dihydro-quinoline-3-carboxylic acid and its pharmaceutically acceptable salts;

1-Cyclopropyl-7-(6,7-dihydro-4H-thieno[3,2-c]pyridin-5-yl)-6-fluoro-4-oxo-1,4-dihydro-quinoline-3-carboxy fluoroborate and its pharmaceutically acceptable salts;

1-Cyclopropyl-7-(6,7-dihydro-4H-thieno[3,2-c]pyridin-5-yl)-6-fluoro-8-mehtoxy-4-oxo-1,4-dihydro-quinoline-3-carboxy fluoroborate and its pharmaceutically acceptable salts;

1-Cyclopropyl-7-(6,7-dihydro-4H-thieno[3,2-c]pyridin-5-yl)-5,6,8-trifluoro-4-oxo-1,4-dihydro-quinoline-3-carboxy fluoroborate and its pharmaceutically acceptable salts;

7-(2-bromo-6,7-dihydro-4H-thieno[3,2-c]pyridin-5-yl)-1-cyclopropyl-8-methoxy-4-oxo-1,4-dihydro-quinoline-3-carboxy fluoroborate and its pharmaceutically acceptable salts;

1-Cyclopropyl-7-(6,7-dihydro-4H-thieno[3,2-c]pyridin-5-yl)-6-fluoro-4-oxo-1,4-dihydro-quinoline-3-carboxylic acid and its pharmaceutically acceptable salts;

1-Cyclopropyl-7-(6,7-dihydro-4H-thieno[3,2-c]pyridin-5-yl)-6-fluoro-8-methoxy-4-oxo-1,4-dihydro-quinoline-3-carboxylic acid and its pharmaceutically acceptable salts;

1-Cyclopropyl-7-(6,7-dihydro-4H-thieno[3,2-c]pyridin-5-yl)-6-fluoro-8-methoxy-5-nitro-4-oxo-1,4-dihydro-quinoline-3-carboxylic acid and its pharmaceutically acceptable salts;

5-Acetylamino-1-cyclopropyl-7-(6,7-dihydro-4H-thieno [3,2-c] pyridin-5-yl)-6,8-difluoro-4-oxo-1,4-dihydro-quinoline-3-carboxylic acid and its pharmaceutically acceptable salts;

5-Amino-1-cyclopropyl-7-(6,7-dihydro-4H-thieno[3,2-c]pyridin-5-yl)-6,8-difluoro-4-oxo-1, 4-dihydro-quinoline-3- carboxylic acid and its pharmaceutically acceptable salts;

1-Cyclopropyl-7-(6,7-dihydro-4H-thieno[3,2-c]pyridin-5-yl)-5,6,8-trifluoro-4-oxo-1, 4-dihydro-quinoline-3-carboxylic acid and its pharmaceutically acceptable salts;

7-(2-bromo-6,7-dihydro-4H-thieno[3,2-c]pyridin-5-yl)-1-cyclopropyl-6-fluoro-8-methoxy-4-oxo-1,4-dihydro-quinoline-3-carboxylic acid and its pharmaceutically acceptable salts;

7- (2-bromo-6,7-dihydro-4H-thieno [3,2-c]pyridin-5-yl)-1-cyclopropyl-6-fluoro-4-oxo-1, 4-hydro-quinoline-3-carboxylic acid and its pharmaceutically acceptable salts;

5-Amino-1-cyclopropyl-7-(2-bromo-6,7-dihydro-4H-thieno[3,2-c]pyridin-5-yl)-6,8-difluoro-4-oxo-1,4-dihydro-quinoline-3-carboxylic acid and its pharmaceutically acceptable salts;

7-(2-carboxy-6,7-dihydro-4H-thieno[3,2-c]pyridin-5-yl)-1-cyclopropyl-6-fluoro-8-methoxy-4-oxo-1, 4-dihydro-quinoline-3- carboxylic acid and its pharmaceutically acceptable salts;

1-Cyclopropyl-6-fluoro-7-(2-formyl-6,7-dihydro-4H-thieno[3,2-c] pyridin-5-yl)-8-methoxy-4-oxo-1, 4-dihydro-quinoline-3-carboxylic acid and its pharmaceutically acceptable salts;

1-Cyclopropyl-6-fluoro-8-methoxy-7-(4-methyl-6,7-dihydro-4H-fluoro[3,2-c] pyridin-5-yl)-4-oxo-1,4-dihydro-quinoline-3-carboxylic acid and its pharmaceutically acceptable salts;

1-Cyclopropyl-6-fluoro-7-(2-acetoxy-6,7-dihydro-4H-thieno[3,2-c]pyridin-5-yl)-8-methoxy-4-oxo-1, 4-dihydro-quinoline-3-carboxylic acid and its pharmaceutically acceptable salts;

1-Cyclopropyl-6-fluoro-7-(2-hydroxyimino-6,7-dihydro-4H-thieno [3,2-c] pyridin-5-yl)-8-methoxy-4-oxo-1,4-dihydro-quinoline-3-carboxylic acid and its pharmaceutically acceptable salts;

1-Cyclopropyl-7-(2-formyl-6,7-dihydro-4H-thieno[3,2-c]pyridin-5-yl)-5,6,8-trifluoro-4-oxo-1, 4-dihydro-quinoline-3-carboxylic acid and its pharmaceutically acceptable salts;

1-Cyclopropyl-6-fluoro-8-methoxy-7-(7-methyl-6, 7-dihydro-4H- thieno[3,2-c]pyridin-5-yl)-4-oxo-1,4-dihydro-quinoline-3-carboxylic acid and its pharmaceutically acceptable salts;

1-Cyclopropyl-6-fluoro-7-(2-hydroxymehtyl-6,7-dihydro-4H-thieno[3,2-c]pyridin-5-yl)-8-methoxy-4-oxo-1,4-dihydro-quinoline-3-carboxylic acid and its pharmaceutically acceptable salts;

1-Cyclopropyl-7-(2-formyl-6,7-dihydro-4H-thieno[3,2-c]pyridin-5-yl)-5,6,8-trifluoro-4-oxo-1,4-dihydro-quinoline-3-carboxy fluoroborate and its pharmaceutically acceptable salts;

1-Cyclopropyl-7-(2-nitro-6,7-dihydro-4H-thieno[3,2-c]pyridin-5-yl)-5,6,8-trifluoro-4-oxo-1,4-dihydro-quinoline-3-carboxy fluoroborate and its pharmaceutically acceptable salts;

1-Cyclopropyl-7-(2-nitro-6,7-dihydro-4H-thieno[3,2-c] pyridin-5-yl)-5,6,8-trifluoro-4-oxo-1,4-dihydro-quinoline-3-carboxylic acid and its pharmaceutically acceptable salts.

5. A composition comprising a compound of formula (I) as defined in any preceding claim, or a therapeutically acceptable salt thereof, and a therapeutically acceptable excipient.

6. A pharmaceutical composition, which comprises a compound as defined in claim 5, and a pharmaceutically acceptable carrier, diluents or excipients or solvate

7. A pharmaceutical composition according to claim 5 and 6, in the form of tablets, pills, capsules, powder, granules, syrup, solution or suspension.

8. A method for treating infections comprising administering a therapeutically acceptable amount of compound of formula (I) as defined in any preceding claim, or a therapeutically acceptable salt thereof.

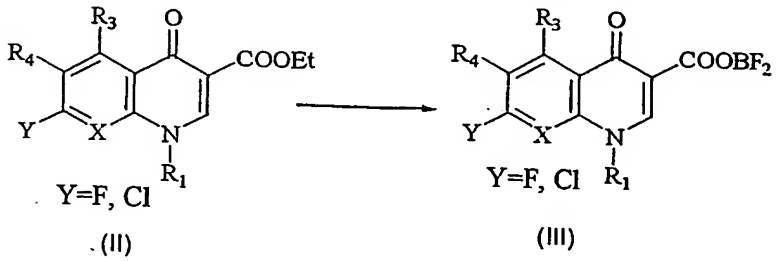
9. A method for treating an infection caused by gram-positive organisms, gram-negative organisms, mycobacterial infections or nosocomial infections comprising administering an effective amount of a compound according to any preceding claims to a mammal in need thereof.

10. The method as claimed in claims 8 and 9 wherein the compound is administered orally, nasally, parenterally, topically, transdermally, or rectally.

11. Use of the compounds as claimed in any preceding claims or their pharmaceutically acceptable salts for the preparation of medicine suitable for the treatment of infection caused by gram-positive organisms, gram-negative organisms, mycobacterial infections or nosocomial infections

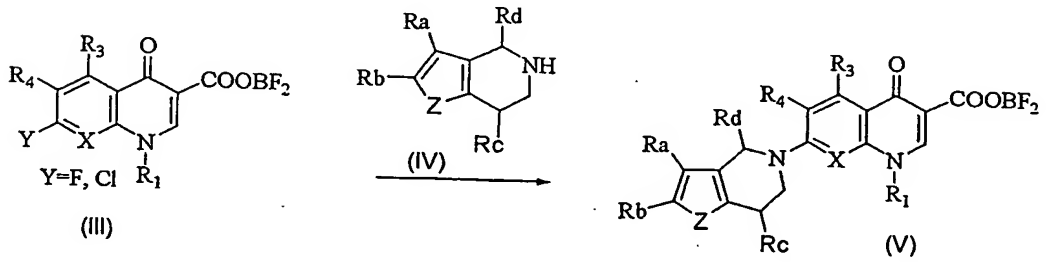
12. A process for the preparation of a compound of formula (I) as defined in claim 1, where all symbols are as defined earlier, and including their derivatives, their analogs, their tautomeric forms, their stereoisomers, their pharmaceutically acceptable salts, their pharmaceutically acceptable solvates, which comprises:

i) converting a compound of formula (II) to compound of formula (III)



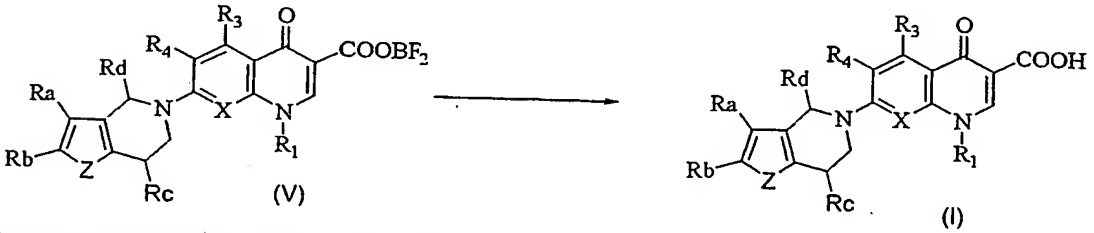
(II) (III)

ii) reacting a compound of formula (III) with a compound of formula (IV) to obtain (V)



(III) (V)

iii) converting the compound of formula (V) to compounds of formula (I)



(V) (I)

Where Ra, Rb, Rc, Rd, R_1, R_3 & R_4 are as described elsewhere in the specification and R_2 = -OBF_2, -OH.